Supplement

Pilot Studies

Pilot for Study 1 (Do theories of interest predict interest outside of one's core area?). We ran a study similar to Study 1 at an earlier date with a smaller sample (N=49) but using an in-person laboratory procedure. It yielded similar and statistically significant results on the primary outcome. The design and method were identical with the exception that undergraduate students completed the theory of interest and interest identity scales in a separate mass testing session at the beginning of the term. Several weeks later, those who qualified as either a techy or a fuzzy (not both or neither) were invited to the lab to participate in the study. With this procedure, there was no way for participants to identify a connection between their responses to the prescreen items and the main portion of the study, mitigating demand processes.

Primary analyses. A repeated-measures analysis yielded the predicted interaction between theories of interest and article type: $F(1, 47)=7.97$, $p=0.007$, $\eta_p^2=0.15$. A stronger fixed theory predicted less interest in the article that mismatched participants' techy or fuzzy interest identity, $\beta=0.36$, $t(48)=2.64$, $p=0.011$. As predicted, however, theories of interest did not predict interest in the identity-matching article, $\beta=-0.22$, $t(48)=-1.51$, $p=0.138$. This interaction also held, $F(1, 44)=11.09$, $p=0.002$, $\eta_p^2=0.20$, controlling for the main effects of techy $F(1, 44)=4.92$, $p=0.032$, $\eta_p^2=0.10$, and fuzzy identity strength $F(1, 44)=2.58$, $p=0.116$, $\eta_p^2=0.06$, and openness to experience, $F(1, 44)=0.73$, $p=0.397$, $\eta_p^2=0.02$, as well as their interactions with article type (techy identity strength: $F(1, 44)=7.58$, $p=0.009$, $\eta_p^2=0.15$, fuzzy identity strength: $F(1, 44)=0.37$, $p=0.545$, $\eta_p^2=0.01$, openness to experience: $F(1, 44)=0.75$, $p=0.786$, $\eta_p^2=0.002$).

There were two notable, yet theoretically consistent, differences in the results as compared to Study 1. Unlike Study 1, in the pilot study, those with a stronger growth theory (+1

SD) expressed equal interest in the matching and mismatching article topics (at ±1 *SD*), β=-0.22, *t*(48)=-1.51, *p*=0.138. In Study 1, interest was lower for the mismatching article topic for both growth and fixed theorists, though more so for those holding a stronger fixed theory. The pilot study also yielded a larger effect size η_p^2=0.15) than Study 1 (η_p^2=0.05). These differences may be attributable to the laboratory (vs. online) procedure.

Exploratory measures and analyses. After completing the primary dependent measures, participants completed several exploratory measures to refine our materials and inform future work.

First, we examined whether theories of interest predicted the perceived interconnectedness between techy and fuzzy areas. If fixed theorists are less open to topics that mismatch their core interests, might they also be less likely to see them as interconnected? Participants were asked to what degree techy and fuzzy areas overlap, which they rated on a 5-point scale from mutually exclusive (*1*) to completely overlapping (*5*). The more participants endorsed a fixed theory, the less overlap they perceived between techy and fuzzy fields, β=0.45, *t*(47)=3.46, *p*=0.001. Controlling for techy and fuzzy interest identity strength and openness to experience yielded the same results, β=0.44, *t*(44)=3.42, *p*=0.001.

Next we assessed how fixed and growth theorists would allocate resources to different academic programs. If those holding a fixed theory are less interested in areas outside their core interests, would they allocate less money to other fields? We told participants that the university was polling students to inform how it would fund particular academic programs (see Hing, Li, & Zanna, 2002). Participants were asked to divide funds among three types of programs: techy programs, fuzzy programs, and programs that integrated the two. There was no interaction between theories of interest on allocations to the three categories of programs, *F*(1, 47)=1.61,

p=0.21, η_p^2=0.03. Controlling for techy and fuzzy interest identity strength and openness to experience, however, there was a trending interaction, $F(1, 43)=2.91$, p=0.066, η_p^2=0.12. In this analysis, a stronger fixed theory endorsement was associated with the allocation of more funds to programs that matched their interest identity, β=-0.27, $t(48)=-2.17$, p=0.035. Theories of interest did not predict allocations to the mismatching area, β=0.11, $t(48)=0.93$, p=0.357, or to integrative programs, β=0.76, $t(48)=0.08$, p=0.593. Those with a stronger growth theory may have split their allocation between mismatching and integrative programs, potentially washing out an effect.

Finally, we assessed the stereotypes techy and fuzzy participants held for in- and out-group members as a function of their theory of interest. Participants were asked to list five words that described a typical techy student and five words that described a typical fuzzy student. Trained research assistants coded for positive and negative attributes. We tested for in- and out-group biases based on theories of interest. Whether or not we controlled for techy and fuzzy interest identity strength and openness to experience, theories of interest did not predict endorsement of positive or negative stereotypes attributes for in- or out-group students, $0.405<ps<0.500$.

Pilot for Study 5 (Sustaining interest in the face of difficulty). Before running Study 5, we piloted the Study 5 materials (a) measuring rather than inducing theories of interest and (b) running Mechanical Turk participants rather than college students (N=116; 42% female; M_{age}=37; 87% non-students). The difference in participant sample is theoretically relevant. As we have emphasized, college students are exploring different academic areas and figuring out what area(s) to invest in. They are also more likely to be exposed to injunctions like “Find your passion.” Thus theories of interest may be most relevant in this population and it is why our

primary studies focused on college students. Consistent with this reasoning, in the Mechanical Turk pilot study, theories of interest (measured), β=-0.16, $t(104)=-0.76$, $p=0.449$, and the interaction between theories of interest and perceived difficulty, β=0.02, $t(104)=0.51$, $p=0.610$, did not predict interest following the article. Nonetheless, the pilot helped us anticipate the percentage of participants who would pass the prescreen and to gauge how long the study would take.

Study 1: Exploratory Measures

After completing the primary dependent measures reported in the main text, participants completed the same exploratory measures described in the "Pilot for Study 1" section above.

First, we examined the extent to which people endorsed fixed and growth theories viewed techy and fuzzy fields as overlapping. Consistent with the Pilot for Study 1, there was a correlation such that a stronger growth theory marginally predicted greater perceived overlap between techy and fuzzy areas, $r(124)=0.17$, $p=0.059$. Theories of interest did not significantly predict the degree of perceived overlap, however, when controlling for techy and fuzzy interest identity strength and openness to experience, β=0.13, $t(123)=1.52$, $p=0.140$, although the pattern was in the same direction.

In the university funds allocation task, there was an interaction between theories of interest and the three program types (i.e., matching, mismatching, and integrated), $F(1, 119)=3.29$, $p=0.039$, $\eta_p^2=0.03$. Consistent with the Pilot for Study 1, a stronger fixed theory predicted a greater allocation to the matching program, β=-0.20, $t(124)=-2.22$, $p=0.028$, and theories of interest did not predict allocations to the mismatching domain, $t<1$. Those endorsing a growth theory, however, marginally predicted the allocation of more funds to integrative programs than those endorsing a fixed theory, β=0.16, $t(124)=1.82$, $p=0.071$. Including the

covariates yielded weaker results (matching programs, β=-0.14, $t(124)=-1.65$, $p=0.102$; mismatching programs, $t<1$; integrative programs, β=0.12, $t(124)=1.31$, $p=0.192$.)

Finally, participants listed five adjectives to describe a typical techy student and another five to describe a typical fuzzy student. Although there was no interaction between theories of interest and the positive adjectives used to describe people in matching and mismatching fields, $F(1, 99)=1.13$, $p=0.290$, $\eta_p^2=0.01$, there was a marginally significant interaction for negative adjectives, $F(1, 99)=3.38$, $p=0.052$, $\eta_p^2=0.04$. Surprisingly, growth theory endorsement was associated with the use of more negative adjectives to describe people from the mismatching field. This pattern of results was consistent when controlling for techy and fuzzy identity strength and openness to experience (positive adjectives: $F(1, 96)=1.60$, $p=0.209$, $\eta_p^2=0.02$; negative adjectives: $F(1, 96)=3.46$, $p=0.066$, $\eta_p^2=0.04$). Twenty percent of participants did not complete the task, however. This together with the fact that the same task in the Pilot for Study 1 produced no condition difference suggests that this result should be interpreted with caution.

Study 3: Exploratory Measures

As in Study 1, after completing the primary measures assessing interest, participants completed several exploratory measures. Because Study 3 experimentally induced theories of interest, here we tested whether the induction would affect these exploratory measures, not whether participants' extant theories of interest would as we tested in Study 1 and the Pilot for Study 1.

First, participants completed the same questions regarding the degree of overlap between techy and fuzzy fields and the allocation of university funds to techy and fuzzy programs. In contrast to the correlational patterns in the Pilot for Study 1 and in Study 1, whether or not

controlling for techy and fuzzy interest identification strength, there was no effect of condition, $F<1$.

Next, we tested whether induced fixed and growth theories affected perceptions of the difficulty of techy and fuzzy fields. We asked participants to rate the difficulty of nine techy (e.g., chemistry, mathematics) and nine fuzzy academic areas (e.g., world history, philosophy). Whether or not we controlled for techy and fuzzy interest identification strength, there was no condition difference in perceived difficulty of techy and fuzzy fields, Fs<1.

Finally, we explored whether theories of interest might affect a sense of belonging in fields in and outside of participants' interest identity. Participants were asked to provide three reasons why they would or would not fit in and succeed in a techy field and in a fuzzy field (see Walton, Cohen, Cwir, & Spencer, 2012). Trained research assistants coded the number of times participants reported that they would or would not fit in and succeed. Whether or not controlling for techy and fuzzy interest identity strength, the interaction between theories of interest and responses in the matching versus mismatching field was not significant, Fs<1.

Study 4: Exploratory Measures

As described in the main text, the chief purpose of Study 4 was to examine expectations for motivation that arise from fixed and growth theories of interest and, specifically, whether a fixed theory would predict that students construe passions as providing limitless motivation (assessed in Question 6 below) and provide a path forward that is relatively free of difficulties (assessed in Question 4 below). These questions directly informed Study 5, which tested the motivational implications of a fixed versus growth theories when pursuing a newfound interest became difficult.

However, Study 4 also explored several additional questions. Questions 1 and 2 explored how those who endorse fixed and growth theories think about the genesis of passions. Trained research assistants coded the data for both (a) agreement and (b) disagreement with the prompts. Results from Question 2 confirmed that a stronger fixed theory were more likely to agree that interests reside within the individual, waiting to be revealed (e.g., "Yes, passions reveal inner desire that the person has always possessed."), β=-0.82, Wald=4.64, p=0.031. Those holding a stronger growth theory, by contrast, were more likely to disagree with the statement (e.g., "No, passion is developed through prolonged interest and hard work"), (β=0.71, Wald=4.35, p=0.037). Additional questions assessed what a newly discovered passion feels like (Questions 3), how it affects the pursuit of other interests (Question 5), and how a newly discovered passion would be experienced in a hypothetical situation (Question 7a and b). No significant results were obtained for these latter questions.

The full survey for Study 4 was as follows:

INSTRUCTIONS: The purpose of this survey is to investigate ideas about people's deepest interests—their passions. Below are several questions for which we would like you to write short responses. There are no right or wrong answers. We are simply interested in your ideas.

First, we'd like to ask you some questions about where a passion comes from.

1. Is a passion something that people tend to discover all at once, or is it something that people come to know over time? Please explain.
2. Is a passion something that was always in you waiting to be revealed?

Next, we'd like to ask you about what people experience the moment they discover a passion.

3. What does it feel like when people first come to know a passion?

Finally, we'd like to ask you about what happens *after* people discover their passion.

4. Once someone has discovered a passion, what is it like for them to pursue that passion? Please explain.
5. Once someone has discovered a passion, does it change how they think about other potential interests? Do people pursue those other things, or do they tend to focus only on their passion? Please explain.
6. Once someone has discovered their passion, what happens to their motivation as they pursue this passion? Will they have limitless motivation? Will they stop procrastinating? Please explain.
7. Imagine that someone thinks they have recently discovered their passion and takes a well-regarded course on the topic at his or her university.
    a. Suppose the person finds the course boring. How does he or she respond? Does their passion persist? Were they mistaken about their passion? Please explain.
    b. Suppose the person doesn't do very well in the course. How does he or she respond? Does their passion persist? Were they mistaken about their passion? Please explain.

Summary of Pilot and Exploratory Results

Our pilot studies and exploratory measures show a high degree of consistency with our theory. The pilot for Study 1 showed virtually the same pattern of significant effects as reported in Study 1. Although the pilot for Study 5 used a theoretically irrelevant sample, it was useful in determining our pre-selection criterion and other study materials. Our exploratory measures, which were added to inform future research directions, were predominantly consistent with our hypotheses, whether statistically significant or trending the predicted direction.

References

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